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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,762	08/19/2003	Andrew Kent	05986/000M673-US0	3914
7278	7590	06/14/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			NGUYEN, VIET Q	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/643,762	Applicant(s) KENT ET AL.	
	Examiner Viet Q. Nguyen	Art Unit 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Election/Response filed on 1/10/2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 23-33 is/are allowed.
- 6) ☒ Claim(s) 21 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/19/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The applicant's election of claims **1-20 and 23-33** is acknowledged.

In response to applicant's remarks, the last restriction requirement is now withdrawn, and all pending claims are present for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim **21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Sharma et al (6,750,491)**.

Sharma et al (Fig. 5a-5d) shows a magnetic memory device (8) have a data layer (12) and a reference layer (14), both of which could be programmed to switch the magnetization vectors (M1, M2) from parallel state to anti-parallel state or vice versa (see col. 2, lines 30-45). Fig. 5b-5c further show that the magnetization vector (M2) can be rotated with 180° (if desired) by applying a programming current to the electrical conductor (22) so as to switch the orientation of magnetic junction (10) from the "parallel" state to the "anti-parallel"

state. In other words, a data logic of state "1" or "0" could be obviously stored into such magnetic memory cell by such magnetization switching technique.

In regard to the claimed particular sequence of steps for "applying an electric current comprising of two successive current pulses of opposite polarity", it is noted that col. 5 (lines 25-55) and Figs. 5a-5e teach the programming method for either logic "0" or logic "1". For example, col. 5 stated that ***"...the first and second pulses 252 and 254 are applied to the second conductor 22 (Fig. 5a)... The first pulse 252 has a positive polarity, which orients the reference layer magnetization vector (M2) ... The second pulse 254 has a negative polarity, which orients the reference layer magnetization vector (M2) in the opposite direction..."*** Thus, as Fig. 5a also shows the use of two successive current pulses (positive 252 and negative 254), which are spaced apart (in time) and also with opposite polarities/phases to each other) being applied to the conductor (22), it would be obvious from Sharma's suggestion that such current will also stop when the magnetization vector of layer (24) will rotate from right direction (Fig.5b) to left direction (5a), or vice versa, as claimed.


3. Other claims **1-20, 22-33** all contain allowable subject matter over prior arts of record with regard to the claimed features of "a read-out magnetic layer", "sub-nanosecond current pulses", and the specific magnetic-material groups for making such magnetic layers, etc.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Q. Nguyen whose telephone number is (571) 272-1788. The examiner can normally be reached on 7am-6pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho can be reached on (703) 308-4910. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


V. Nguyen
2/21/2005

Viet Q Nguyen
Primary Examiner
Art Unit 2827

